

627 RIVERBANK DRIVE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

SPONSOR: **Carnegie Fabrics**
Rockville Centre, NY

Sound Absorption
RAL™-A24-497

CONDUCTED: 2024-12-18

Page 1 of 9

ON: Kirei Hatch ACT Tile (9mm)

TEST METHODOLOGY

Riverbank Acoustical Laboratories™ is accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) as an ISO 17025:2017 Laboratory (NVLAP Lab Code: 100227-0) and for this test procedure. The test reported in this document conformed explicitly with ASTM C423-23: "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method." The specimen mounting was performed according to ASTM E795-23: "Standard Practices for Mounting Test Specimens During Sound Absorption Tests." A description of the measurement procedure and room specifications are available upon request. The results presented in this report apply to the sample as received from the test sponsor.

INFORMATION PROVIDED BY SPONSOR

The test specimen was designated by the sponsor as Kirei Hatch ACT Tile (9mm). The following nominal product information was provided by the sponsor prior to testing. The accuracy of such sponsor-provided information can affect the validity of the test results.

Product Under Test

Product Name: Kirei Hatch ACT Tile (9mm)
Manufacturer: Carnegie Fabrics

SPECIMEN MEASUREMENTS & TEST CONDITIONS

Through a full external visual inspection performed on the test specimen, Riverbank personnel verified the following information:

Test Specimen

Dimensions: 16 tiles @ 600 mm (23.625 in.) by 600 mm (23.625 in.)
4 tiles @ 343 mm (13.5 in.) by 600 mm (23.625 in.)
Thickness: 9.5 mm (0.374 in.)
Overall Weight: 13.04 kg (28.75 lbs)
Mass per Unit Volume: 208 kg/m³ (13.0 lbs/ft³)

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Carnegie Fabrics
2024-12-18

RAL™-A24-497
Page 2 of 9

SPECIMEN MEASUREMENTS & TEST CONDITIONS (continued)

Overall Specimen Properties

Size: 2.74 m (108.0 in) wide by 2.4 m (94.5 in) long
Thickness: 0.01 m (0.374 in)
Weight: 13.04 kg (28.75 lbs)
Mass per Unit Area: 1.98 kg/m² (0.41 lbs/ft²)
Calculation Area: 6.585 m² (70.88 ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 21.3 °C ± 0.1 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 60.55 % ± 2.5 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure: 99.7 kPa (Requirement not defined)

MOUNTING METHOD

Type E-400 Mounting: The test specimen was mounted across a metal fixture which was open at its top and bottom and enclosed at its sides, creating an enclosed airspace between the test specimen and the horizontal test surface. The numeral suffix in the designation is defined in ASTM E795-23 as the distance in millimeters from the exposed face of the test specimen to the test surface, rounded to the nearest integer multiple of 5. Perimeter edges were sealed with metal framing and tape.

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Test Report

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FOUNDED 1918 BY
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Carnegie Fabrics
2024-12-18

RAL™-A24-497
Page 3 of 9

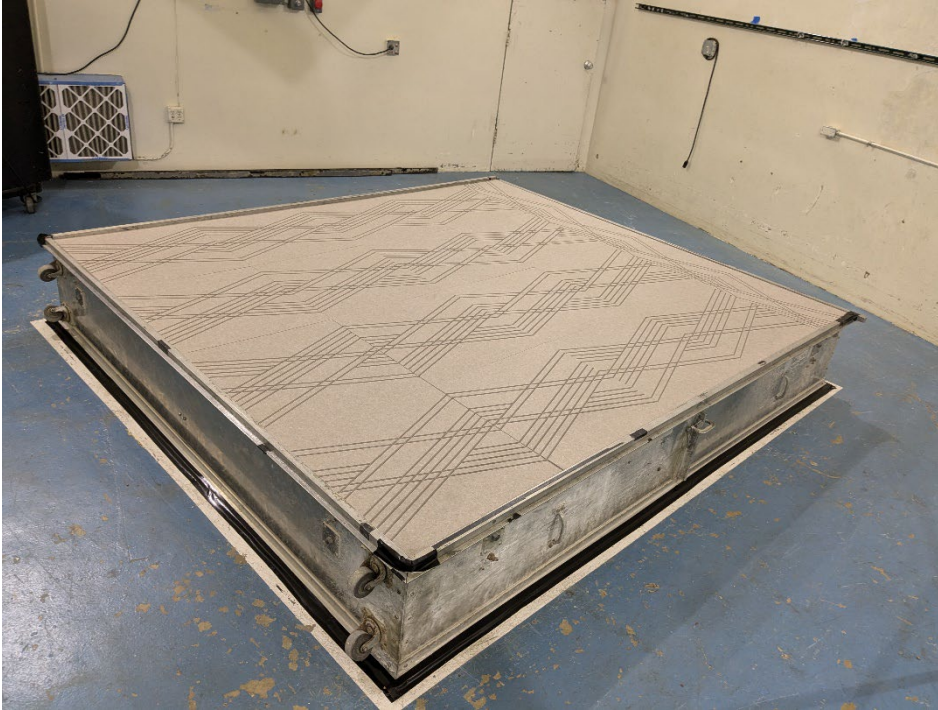


Figure 1 – Specimen mounted in test chamber

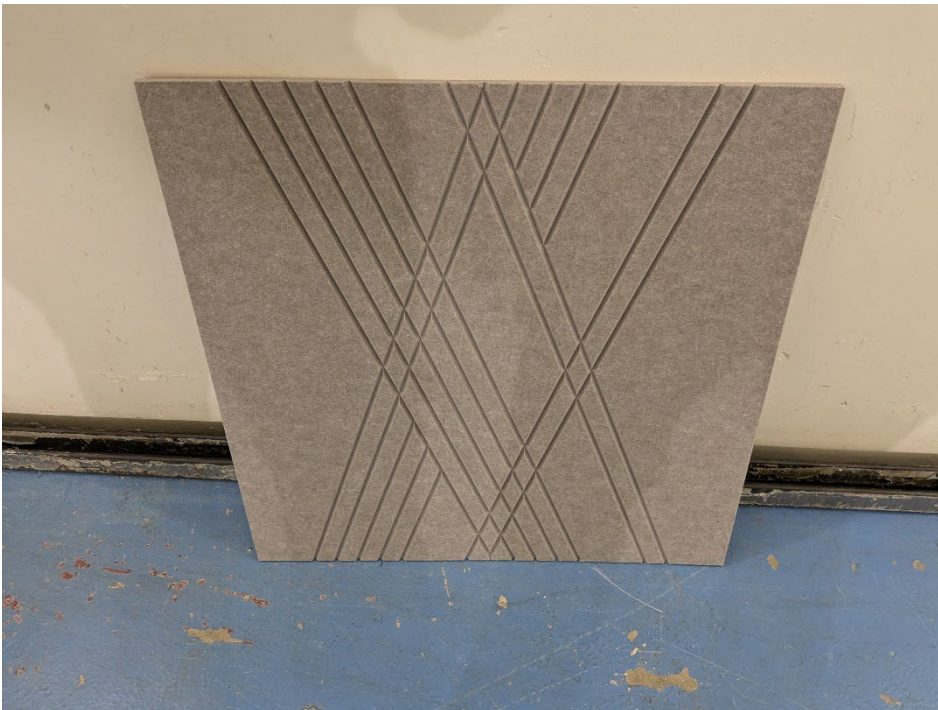


Figure 2 – Individual specimen tile

627 RIVERBANK DRIVE
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630-232-0104

Test Report

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FOUNDED 1918 BY
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Carnegie Fabrics
2024-12-18

RAL™-A24-497
Page 4 of 9

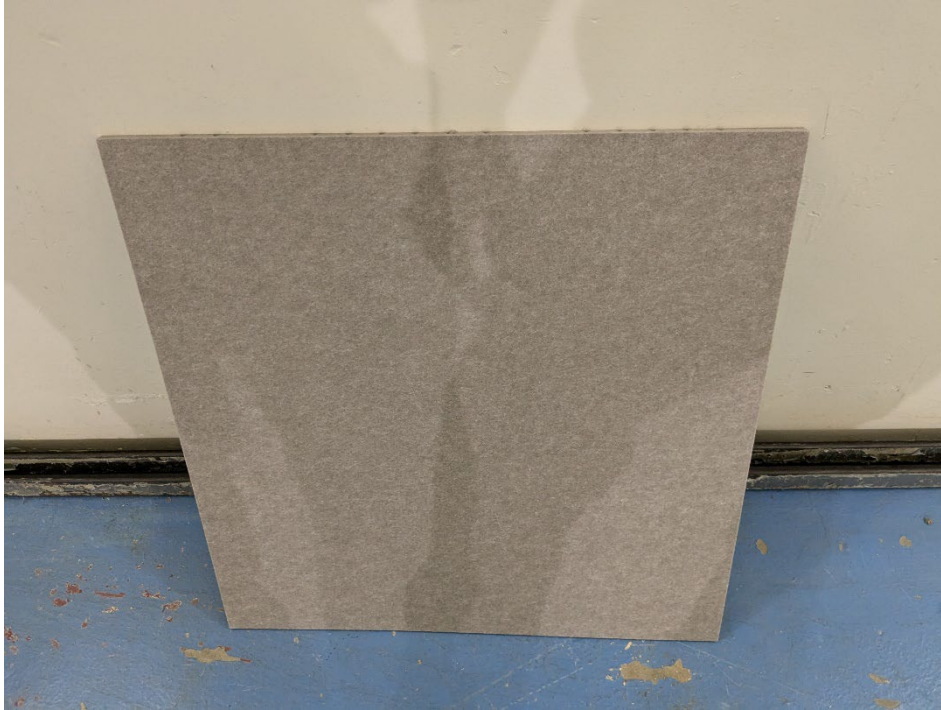


Figure 3 – Individual specimen tile



Figure 4 – Detail of specimen material

627 RIVERBANK DRIVE
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 630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
 WALLACE CLEMENT SABINE

Carnegie Fabrics
 2024-12-18

RAL™-A24-497
 Page 5 of 9

TEST RESULTS

Specimen total absorption and absorption coefficient are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages.

1/3 Octave Center Frequency (Hz)	Total Absorption (m ²)	Total Absorption (Sabins)	Absorption Coefficient
100	6.03	64.95	0.92
** 125	5.96	64.15	0.91
160	5.22	56.15	0.79
200	6.45	69.45	0.98
** 250	6.58	70.81	1.00
315	6.36	68.43	0.97
400	5.77	62.05	0.88
** 500	4.55	48.99	0.69
630	5.38	57.94	0.82
800	5.71	61.51	0.87
** 1000	5.55	59.71	0.84
1250	6.01	64.69	0.91
1600	5.95	64.09	0.90
** 2000	6.13	66.03	0.93
2500	6.30	67.77	0.96
3150	6.27	67.44	0.95
** 4000	6.36	68.41	0.97
5000	6.31	67.94	0.96

SAA = 0.90
NRC = 0.85

627 RIVERBANK DRIVE
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630-232-0104

Test Report

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FOUNDED 1918 BY
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Carnegie Fabrics
2024-12-18

RAL™-A24-497
Page 6 of 9

TEST RESULTS (continued)

The sound absorption average (SAA) is defined in ASTM C423-23 Section 3.1.1 as the arithmetic average of the sound absorption coefficients of a material for the twelve one-third octave bands from 200 Hz through 2500 Hz, inclusive, rounded to the nearest integer multiple of 0.01.

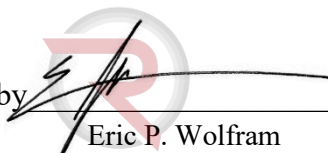
The noise reduction coefficient (NRC) is defined from previous versions of ASTM C423 as the arithmetic average of the sound absorption coefficients at 250 Hz, 500 Hz, 1000 Hz, and 2000 Hz, rounded to the nearest integer multiple of 0.05.

Tested by 

Marc Sciaky
Senior Experimentalist

Report by 

Keith Kimberling
Test Engineer

Approved by 

Eric P. Wolfram
Laboratory Manager

627 RIVERBANK DRIVE
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630-232-0104

Test Report

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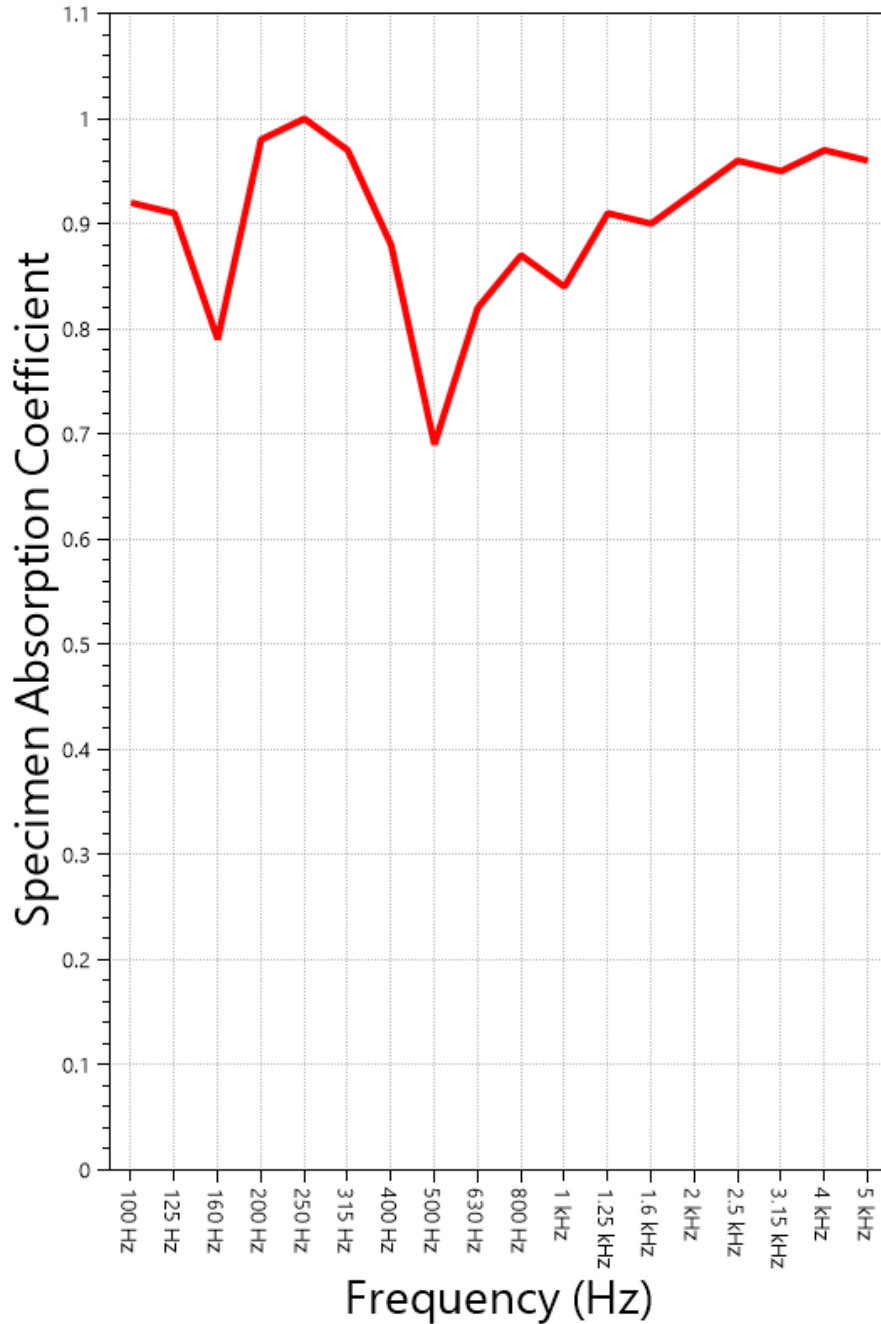
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2024-12-18

RAL™-A24-497
Page 7 of 9

SOUND ABSORPTION REPORT

Kirei Hatch ACT Tile (9mm)



SAA = 0.90

NRC = 0.85



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Test Report

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FOUNDED 1918 BY
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Carnegie Fabrics
 2024-12-18

RAL™-A24-497
 Page 8 of 9

APPENDIX A: Extended Frequency Range Data

Specimen: Kirei Hatch ACT Tile (9mm) (See Full Report)

The following non-accredited data were obtained in accordance with ASTM C423-23, but extend beyond the defined frequency range of 100Hz to 5,000Hz. These unofficial results are representative of the RAL test environment only and intended for research & comparison purposes.

1/3 Octave Band Center Frequency (Hz)	Total Absorption (Sabins)	Absorption Coefficient
31.5	27.27	0.38
40	15.34	0.22
50	63.01	0.89
63	21.95	0.31
80	40.13	0.57
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100	64.95	0.92
125	64.15	0.91
160	56.15	0.79
200	69.45	0.98
250	70.81	1.00
315	68.43	0.97
400	62.05	0.88
500	48.99	0.69
630	57.94	0.82
800	61.51	0.87
1000	59.71	0.84
1250	64.69	0.91
1600	64.09	0.90
2000	66.03	0.93
2500	67.77	0.96
3150	67.44	0.95
4000	68.41	0.97
5000	67.94	0.96
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6300	66.14	0.93
8000	67.14	0.95
10000	65.10	0.92
12500	57.41	0.81

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Carnegie Fabrics
2024-12-18

RAL™-A24-497
Page 9 of 9

APPENDIX B: Instruments of Traceability

Specimen: Kirei Hatch ACT Tile (9mm) (See Full Report)

<u>Description</u>	<u>Model</u>	<u>Serial Number</u>	<u>Date of Certification</u>	<u>Calibration Due</u>
System 1	Type 3160-A-042	3160-106974	2024-08-15	2025-08-15
Bruel & Kjaer Mic And Preamp G	Type 4943-B-001	2525858	2024-05-07	2025-05-07
Bruel & Kjaer Pistonphone	Type 4228	2781248	2024-07-19	2025-07-19
EXTECH Hygro 959	SD700	A099959	2024-03-29	2025-03-29

APPENDIX C: Revisions to Original Test Report

Specimen: Kirei Hatch ACT Tile (9mm) (See Full Report)

<u>Date</u>	<u>Revision</u>
2025-01-16	Original report issued

END